

**Department of Transportation**

**For the Years Ended  
June 30, 1999, and June 30, 1998**

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STATE OF TENNESSEE  
**COMPTROLLER OF THE TREASURY**

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**John G. Morgan**  
Comptroller

April 10, 2000

The Honorable Don Sundquist, Governor  
and

Members of the General Assembly  
State Capitol  
Nashville, Tennessee 37243

and  
The Honorable J. Bruce Saltsman, Sr., Commissioner  
Department of Transportation  
Suite 700, James K. Polk Building  
Nashville, Tennessee 37243

Ladies and Gentlemen:

We have conducted a financial and compliance audit of selected programs and activities of the Department of Transportation for the years ended June 30, 1999, and June 30, 1998.

We conducted our audit in accordance with generally accepted auditing standards and the standards contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. These standards require that we obtain an understanding of management controls relevant to the audit and that we design the audit to provide reasonable assurance of the Department of Transportation's compliance with the provisions of laws, regulations, contracts, and grants significant to the audit. Management of the Department of Transportation is responsible for establishing and maintaining internal control and for complying with applicable laws and regulations.

Our audit disclosed certain findings which are detailed in the Objectives, Methodologies, and Conclusions section of this report. The department's administration has responded to the audit findings; we have included the responses following each finding. We will follow up the audit to examine the application of the procedures instituted because of the audit findings.

We have reported other less significant matters involving the department's internal control and/or instances of noncompliance to the Department of Transportation's management in a separate letter.

Sincerely,

John G. Morgan  
Comptroller of the Treasury

JGM/ms99/095

State of Tennessee

# Audit Highlights

Comptroller of the Treasury

Division of State Audit

Financial and Compliance Audit

**Department of Transportation**

For the Years Ended June 30, 1999, and June 30, 1998

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## AUDIT SCOPE

We have audited the Department of Transportation for the period July 1, 1997, through June 30, 1999. Our audit scope included those areas material to the Tennessee Comprehensive Annual Financial Report for the years ended June 30, 1999, and June 30, 1998, and the Tennessee Single Audit Report for the same periods. In addition to those areas, our primary focus was on management's controls and compliance with policies, procedures, laws, and regulations in the areas of Improper Disposal of an Automobile Lift and Misuse of Garage Facilities and Equipment--Special Investigation, Theft of Property from the Knoxville Garage--Special Investigation, Allegations of Improprieties Involving Road Construction Contracts--Special Investigation, Allegations of Improprieties Involving Railroad Crossing Upgrade Contracts--Special Investigation, Right-of-Way Division Contracts--Special Investigation, Bridge Maintenance and Inspection, Transportation Equity Fund, Final Records, Overweight and Overdimensional, Information Systems, and Internal Audit. The audit was conducted in accordance with generally accepted auditing standards and the standards contained in *Government Auditing Standards*, issued by the Comptroller General of the United States.

## AUDIT FINDINGS

### **Management Failed to Enforce Surplus Equipment Disposal Procedures and Allowed Improper Use of State Property for Work on Non-State Vehicles**

Employees arranged for a private citizen to remove an automobile lift from the garage and mechanics received cash payments to repair personal vehicles at the garage (page 5).

### **Weaknesses in the Department's Internal Controls Allowed Misappropriation of State Property to Go Undetected**

Automotive parts and other items totaling \$10,533.32 were ordered for personal use and charged to the garage's accounts with various vendors (page 7).

**Improvements Needed in Documentation of Decisions for Supplemental Agreements**

Net supplemental agreements totaling \$32,101,676 were approved by the department for road construction contracts closed during fiscal years 1997, 1998, and 1999. Because of the lack of detailed documentation supporting some decisions made by department officials on various supplemental agreements, it could not be determined whether the bases for all the supplemental agreements reviewed were appropriate (page 11).

**Railroad Crossing Safety Program Needs Improvement**

Decisions for upgrading railroad crossings were made that were unjustified and inappropriate (page 13).

**Improper and Inept Manipulation of Contracts to Obtain Computer-Programming Services**

Management officials with the department's Right-of-Way Division used supplemental agreements to an appraisal contract to obtain computer-programming services totaling \$34,908.60 (page 16).

**Improper and Inept Manipulation of Contracts to Obtain Computer Equipment**  
Right-of-way consultant contracts contained language requiring consultants to provide a computer system to the division, circumventing established procurement procedures (page 17).

**Inspections of Bridges and Other Structures Are Not Always in Accordance With Departmental Procedures**

The department has established policies and procedures for inspecting bridges and other structures. However, department personnel do not always adhere to these policies and procedures. The proper inspection was not always performed and inspections were not always performed timely (page 19).

**No Written Policies and Procedures for the Transportation Equity Fund**

The department has not developed written policies and procedures for the Transportation Equity Fund to ensure funds are accounted for properly (page 22).

**Surety Bond for Overweight and Over-dimensional Permits Not Required**

The department does not ensure that potential Overweight and Overdimensional Permit holders provide a surety bond or furnish satisfactory proof of solvency as required by *Tennessee Code Annotated*, Section 55-7-205(g) (page 25).

**DOT STARS Disaster Recovery Documentation Is Inadequate**

The disaster recovery plan and the documented results of mock disaster testing for DOT STARS are insufficient (page 27).

**Computer Administrative and Security Controls Need Improvement**

The Department of Transportation needs to improve its controls over the authorization and approval of computer user access, and the elimination of user access for terminating employees (page 28).

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“Audit Highlights” is a summary of the audit report. To obtain the complete audit report which contains all findings, recommendations, and management comments, please contact

Comptroller of the Treasury, Division of State Audit  
1500 James K. Polk Building, Nashville, TN 37243-0264  
(615) 741-3697

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**Audit Report**  
**Department of Transportation**  
**For the Years Ended June 30, 1999, and June 30, 1998**

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# **Department of Transportation**

## **For the Years Ended June 30, 1999, and June 30, 1998**

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### **INTRODUCTION**

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#### **POST-AUDIT AUTHORITY**

This is the report on the financial and compliance audit of the Department of Transportation. The audit was conducted pursuant to Section 4-3-304, *Tennessee Code Annotated*, which authorizes the Department of Audit to “perform currently a post-audit of all accounts and other financial records of the state government, and of any department, institution, office, or agency thereof in accordance with generally accepted auditing standards and in accordance with such procedures as may be established by the comptroller.”

Section 8-4-109, *Tennessee Code Annotated*, authorizes the Comptroller of the Treasury to audit any books and records of any governmental entity that handles public funds when the Comptroller considers an audit to be necessary or appropriate.

#### **BACKGROUND**

The mission of the Department of Transportation is to plan, implement, maintain, and manage an integrated transportation system for moving people and products, with emphasis on quality, safety, efficiency, and the environment. In order to fulfill this mission, the department is organized into two bureaus. The Bureau of Planning and Development administers all phases of transportation programs, from planning to the advertising of highway contracts. The Bureau of Operations is responsible for awarding contracts, constructing and maintaining state highways, and administering field work.

Along with its roadway activities, other duties which fall to these two bureaus include planning and developing rail transportation, providing aerial photography and mapping services, maintaining and operating state-owned aircraft, issuing permits for overdimensional vehicles, funding and assisting publicly owned airports, and controlling outdoor advertising on state highways. The department also provides maintenance on the state’s general vehicle fleet and technical and funding assistance to over 300 public transportation agencies.

In recent years, one of the primary goals of the department has been to complete the substantial road program passed by the state legislature in 1986. The program is nearly 78% complete.



With 5,000 employees and a budget over one billion dollars, the department is one of the largest agencies in state government. An organization chart of the department is on the following page.

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## **AUDIT SCOPE**

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We have audited the Department of Transportation for the period July 1, 1997, through June 30, 1999. Our audit scope included those areas material to the Tennessee Comprehensive Annual Financial Report for the years ended June 30, 1999, and June 30, 1998, and to the Tennessee Single Audit Report for the same period. In addition to those areas, our primary focus was on management's controls and compliance with policies, procedures, laws, and regulations in the areas of Improper Disposal of an Automobile Lift and Misuse of Garage Facilities and Equipment—Special Investigation, Theft of Property from the Knoxville Garage—Special Investigation, Allegations of Improprieties Involving Road Construction Contracts—Special Investigation, Allegations of Improprieties Involving Railroad Crossing Upgrade Contracts—Special Investigation, Right-of-Way Division Contracts—Special Investigation, Bridge Maintenance and Inspection, Transportation Equity Fund, Final Records, Overweight and Overdimensional, Information Systems, and Internal Audit. The audit was conducted in accordance with generally accepted auditing standards and the standards contained in *Government Auditing Standards*, issued by the Comptroller General of the United States.

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## **OBJECTIVES, METHODOLOGIES, AND CONCLUSIONS**

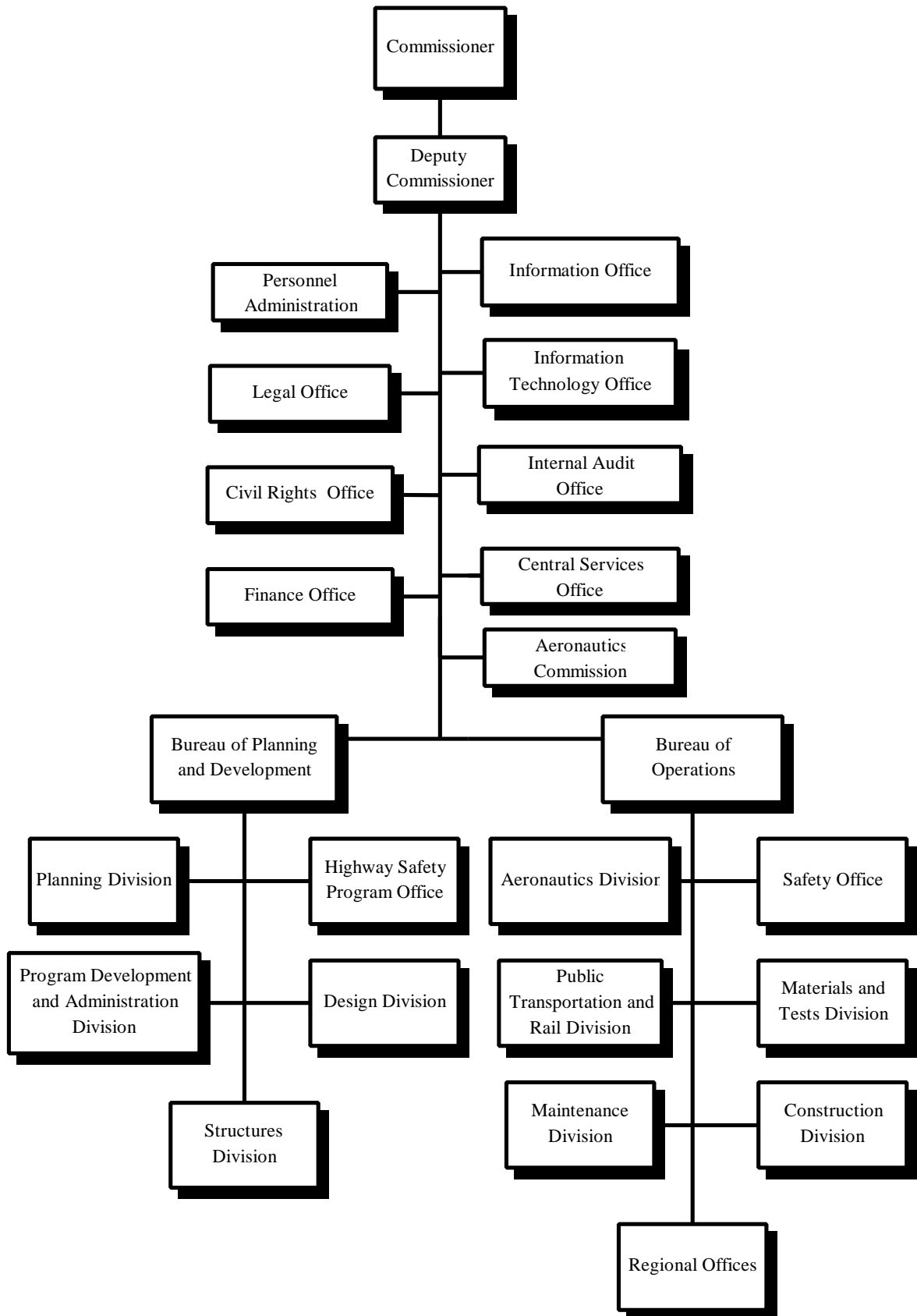
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### **AREAS RELATED TO TENNESSEE'S COMPREHENSIVE ANNUAL FINANCIAL REPORT AND SINGLE AUDIT REPORT**

Our audit of the Department of Transportation is an integral part of our annual audit of the Comprehensive Annual Financial Report (CAFR). The objective of the audit of the CAFR is to render an opinion on the State of Tennessee's general-purpose financial statements. As part of our audit of the CAFR, we are required to gain an understanding of the state's internal control and determine whether the state complied with laws and regulations that have a material effect on the state's general-purpose financial statements.

Our audit of the Department of Transportation is also an integral part of the Tennessee Single Audit, which is conducted in accordance with the Single Audit Act, as amended by the

# Department of Transportation Organization Chart



Single Audit Act Amendments of 1996. The Single Audit Act, as amended, requires us to determine whether

- the state complied with rules and regulations that may have a material effect on each major federal financial assistance program, and
- the state has internal control to provide reasonable assurance that it is managing its major federal award programs in compliance with applicable laws and regulations.

We determined the following areas within the Department of Transportation were material to the CAFR and to the Single Audit Report: Federal Aid Highway Program and Airport Improvement Program.

To address the objectives of the audit of the CAFR and the Single Audit Report, as they pertain to these two major federal award programs, we interviewed key department employees, reviewed applicable policies and procedures, and tested representative samples of transactions.

We have audited the general-purpose financial statements of the State of Tennessee for the years ended June 30, 1999, and June 30, 1998, and have issued our reports thereon dated December 10, 1999, and January 25, 1999. The opinion on the June 30, 1999, financial statements is unqualified. The opinion on the June 30, 1998, financial statements was qualified because of the unprecedented nature of the year 2000 issue. The Tennessee Single Audit Report for the years ended June 30, 1999, and June 30, 1998, includes our reports on the schedule of expenditures of federal awards and on internal control and compliance with laws and regulations.

Minor weaknesses came to our attention which have been reported to management in a separate letter.

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#### **IMPROPER DISPOSAL OF AN AUTOMOBILE LIFT AND MISUSE OF GARAGE FACILITIES AND EQUIPMENT—SPECIAL INVESTIGATION**

On January 11, 1999, the Director of Internal Audit for the Department of Transportation (DOT) notified the Division of State Audit that he had received information alleging the improper disposal of a surplus automobile lift by employees of the DOT Region 3 maintenance garage in Nashville.

Division of State Audit staff reviewed the allegation in collaboration with Department of Transportation (DOT) Internal Audit staff. The review was expanded to address additional allegations that non-state vehicles had been repaired in the DOT Region 3 garage and that a state-owned forklift had been damaged during one of the repairs. A Special Report on this matter was released in May 1999.

The objectives of the review were

- to determine if a surplus automobile lift had been disposed of improperly;
- to determine which employees were responsible for the alleged improper disposal;
- to determine whether other DOT equipment and parts had been misappropriated;
- to refer any findings to Department of Transportation management; and
- to refer the results of the review, if appropriate, to the Office of the State Attorney General and the Office of the District Attorney General, Twentieth Judicial District.

Division of State Audit and DOT Internal Audit staff interviewed the DOT Region 3 garage superintendent, supervisors, mechanics, and storekeeper. In addition, auditors interviewed DOT administration and Region 3 management staff and the owner and an employee of a local wrecker service (identified as obtaining the surplus automobile lift). Relevant inventory lists, repair work orders, invoices, personal checks, and disposal policies were reviewed. The auditors also observed the surplus automobile lift, a non-state vehicle at the DOT Region 3 garage for repairs, and the forklift in question.

The auditors determined that the garage superintendent and an equipment mechanic 2 (one of three mechanic supervisors) circumvented surplus property disposal procedures and arranged for a private citizen to remove the automobile lift, valued at \$500.00, from the garage on January 5, 1999.

**1. Management failed to enforce surplus equipment disposal procedures and allowed improper use of state property for work on non-state vehicles**

**Finding**

State policy provides that the property officer of the agency is to notify the Department of General Services when property has been declared surplus. Then, General Services staff inspect the property and determine the appropriate disposal method. The garage superintendent of the DOT Region 3 maintenance garage in Nashville and the equipment mechanic 2 admitted that they circumvented surplus property disposal procedures and arranged for a private citizen to remove the automobile lift from the garage on January 5, 1999. The property officer, a procurement officer 2, acknowledged that he provided his supervisor, the garage superintendent, incorrect information when questioned about the appropriate procedures for disposal of the automobile lift. The procurement officer said that he told the garage superintendent that the lift did not have a fixed asset tag, was not on his property list, and therefore was not his concern.

The auditors also determined that the garage superintendent, the equipment mechanic 2, the procurement officer 2, and five other DOT Region 3 employees had repaired non-state

(personal) vehicles at the garage. Nine personal vehicles were repaired at the garage. Moreover, the four mechanics received cash payments, ranging from \$5 to \$30, for their work from the owners of three of the nine non-state vehicles.

The auditors further determined that a second lift had been slightly damaged during the repair of a non-state vehicle in the DOT Region 3 garage. The garage superintendent acknowledged that while he was using the forklift to facilitate the repair of his son's automobile, a hydraulic fitting on the forklift was broken and the forklift was rendered inoperable.

At the request of DOT Region 3 management, the automobile lift was returned by the wrecker company to the DOT Region 3 garage on January 15, 1999. The forklift was repaired by DOT Region 3 mechanics on January 15, 1999, at a cost of \$67.39 for parts and labor.

The department has taken administrative actions against several of the employees involved.

On February 16, 1999, the Office of the District Attorney General, Twentieth Judicial District (Davidson County), was notified of the findings pertaining to the improper actions of the DOT Region 3 employees and that office determined that further action was not warranted.

### **Recommendation**

Management should ensure strict adherence to established surplus property disposal procedures. Management should emphasize to DOT staff that repair of personal vehicles at DOT garages, or with DOT equipment, is strictly prohibited.

### **Management's Comment**

We concur. Management has informed staff about the need to make sure all employees are aware of surplus property disposal procedures. Management took appropriate disciplinary procedures against all employees using DOT facilities and equipment to repair personal vehicles at the Region 3 facility. Management has notified staff that such use of DOT facilities and equipment is in violation of Department policies and will not be permitted.

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## **THEFT OF PROPERTY FROM THE KNOXVILLE GARAGE – SPECIAL INVESTIGATION**

The review was initiated after July 9, 1997, when one of the employees of the DOT Region 1 garage in Knoxville notified the garage superintendent that an equipment mechanic had requested him to sign vendor invoices as "received" when he actually had not picked up the items. After being informed of this matter, the superintendent confronted the equipment mechanic, who admitted that he had personally benefited from the orders of these parts. This information was

forwarded to the department's internal audit section and later to the Division of State Audit for a review of the matter. A Special Report on this matter was released in January 2000.

The objectives of the review were

- to determine the extent of the theft of automotive parts purchased by the Region 1 garage in Knoxville during the period July 1, 1996, through August 1, 1997;
- to evaluate the department's internal controls over the ordering, receiving, and final disposition of parts;
- to report our findings to the department and recommend appropriate actions to correct any deficiencies; and
- to report our findings to the Office of the State Attorney General and the appropriate Office of the District Attorney General.

The review was conducted jointly by the Division of State Audit and the internal audit section of the department.

The review of garage purchases revealed that a total of \$10,533.32 in automotive parts and other items were ordered for personal use and charged to the garage's accounts with various vendors during the period August 1, 1996, through July 7, 1997. The review determined that of the \$10,533.32, \$9,871.73 was ordered through Dealer Service Parts (DSP) and \$45.80 was ordered from Burlington Motor Products, Inc., (BMP) by a garage mechanic in charge of ordering replacement parts. A total \$146.67 in automotive parts was improperly ordered through BMP by another garage heavy equipment mechanic acting independently of the mechanic previously noted. A total of \$240.50 was ordered through DSP by a materials assistant and charged to the department's account by a DSP salesperson. It could not be determined who ordered the remaining \$228.62 in automotive parts. It was determined that items were ordered for personal use through interviews and vendor inquiries which verified that automotive parts ordered would not fit on the state vehicles for which the parts were ordered. The review revealed several weaknesses in the department's internal controls over the procurement of replacement parts.

**2. Weaknesses in the department's internal controls allowed misappropriation of state property to go undetected**

**Finding**

The theft of items from the DOT Region 1 garage located in Knoxville totaling \$10,533.32 were not promptly detected because (1) the two employees responsible for ordering parts for the garage circumvented controls by ordering items for personal use and submitting the related invoices to the garage's business office for payment; (2) the garage mechanic, in charge of

purchases, additionally circumvented controls by falsifying work orders and requesting other employees to sign invoices for items they had not actually received; (3) the invoices from Dealer Service Parts and other vendors did not contain a description of the parts ordered, thereby preventing any scrutiny while the purchases were being processed; (4) the department's internal controls did not require a separation of duties among those employees determining which parts were needed, ordering parts, picking up parts, and the mechanics ultimately using the parts; and (5) the department did not require a reconciliation of parts received (invoices) to parts placed on vehicles (work orders).

Although the two mechanics entrusted with the purchasing duties for the garage abused their authority, no additional controls were in place to detect this purchasing scheme. The most critical deficiency in controls was the lack of separation of duties between the employees involved in the purchasing process. This critical control weakness and others were noted in the review.

- The same employee responsible for ordering parts was able to pick up the parts and ultimately use them for his personal benefit without the assistance or oversight of another employee other than the routine of having the invoice approved for payment by the garage superintendent. The superintendent did not detect the improper purchases because the invoices were generally nondescript.
- The mechanic in charge of purchases requested parts runners to sign invoices as having received the items and also falsified work orders. These activities were performed to conceal the true nature of the transactions from a subsequent review by other garage staff, supervisors, or auditors.
- The purchasing process at the garage began with a determination of which parts were needed for the repair job. It was noted that these decisions were oftentimes made exclusively by the employee responsible for ordering the parts. In an optimal setting, these decisions would be made jointly between the garage foreman and the mechanic and would be separated from the employee responsible for ordering parts. If the repair part was held in the garage stockroom, the mechanic would request the item and present the respective work order for that job. A stockroom employee would sign the work order and write the part description and number on the work order. The stockroom employee would also indicate the disposition of the part in the stockroom inventory records. The involvement of stockroom employees in the purchasing process apparently added effective controls over those items maintained in stock. The involvement of stockroom employees separated the duties between those individuals ordering parts from those that are ultimately using the parts (the mechanics). However, the parts not kept in the stockroom and ordered from local vendors were not kept on an inventory listing. Additionally, the very employee responsible for ordering parts prepared the dispositions of these parts recorded on the work orders. The department did not require a reconciliation of parts received (invoices) to parts placed on vehicles (work orders). Additionally, there were no controls separating the responsibility between the physical possession of the parts and the record keeping. If deliveries and parts picked up were initially required to be placed in the stockroom, it

appears that greater controls could be created if the mechanic would have to sign a stockroom log before receiving the part.

- Furthermore, mechanics were required to sign work orders, certifying that parts purchased were used to accomplish the job. However, the control over the work orders was maintained by the mechanic in charge of purchases. After obtaining the required signatures, he would subsequently enter the personal items he ordered. The procedures did not include the documentation that the jobs were finalized by any employee other than the mechanic in charge.

The department incurred a total direct loss of \$8,531.93 because \$2,001.39 of the total \$10,533.32 was not paid by the department. The processing of the related invoices was canceled after it was determined that the items were not legitimate orders for state vehicles. The department recovered \$7,687.56 of the total \$8,531.93 loss sustained from the theft of property from the Knoxville regional garage. Furthermore, the department has taken administrative action against all four state employees involved.

On March 13, 1998, we submitted our draft findings pertaining to this matter to the Office of the State Attorney General and the Office of the District Attorney General, Sixth Judicial District (Knox County). The Office of the District Attorney General pursued actions regarding the activities of a garage mechanic and the DSP salesperson.

### **Recommendation**

This review resulted in the following recommendations:

1. In all garages, department officials should separate the duties between those garage employees involved in the process of purchasing automotive parts from local vendors. Specifically, decisions regarding the need for such parts should be made jointly between the garage foreman and the mechanic. The employee responsible for ordering parts and recording the placement of those parts on the respective work orders should be separated from maintaining physical custody of the parts. The work orders should be completed/finalized by either the garage foreman or the mechanic.
2. In all garages, department officials should require a periodic reconciliation of work orders to parts purchased. This procedure should be performed by someone independent of the purchasing process. The management of the garage should continue to require all parts picked up from local vendors to be logged, but unless this log is also reconciled periodically to the respective invoices and work orders, the value of the log is questionable. The management of the garage should also ensure that employees do not sign for parts not actually received.
3. For all garages, department officials should consider requesting local vendors to list the details of the items purchased on their invoices. A request for the listing of the make and model of



the vehicle for which the parts were ordered should also be considered. Department officials should not pay invoices which lack a specific description of items received.

4. All garage management should consider instituting a pre-numbered purchase order system to account for replacement part purchases rather than the current system of using state vehicle license plate numbers.

### **Management's Comment**

We concur. Staff at the Region 1 garage have been working to streamline their purchasing procedures. Part of this effort to streamline purchasing procedures resulted in the separation of duties as documented in the finding recommendations. Positions in this region have been brought in line with other regions regarding procurements.

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### **ALLEGATIONS OF IMPROPRIETIES INVOLVING ROAD CONSTRUCTION CONTRACTS— SPECIAL INVESTIGATION**

In March 1999, the Division of State Audit received allegations of improprieties involving the Department of Transportation. It was subsequently determined that the allegations were without specific facts and were based purely on speculation. Nevertheless, in light of the seriousness of the allegations, if true, it was decided that this office would review this matter. A Special Report on these issues was released on November 16, 1999.

The objectives of the review were

- to determine whether the department had appropriate reasons for supplemental agreements to road construction contracts; and
- to report the findings to the Department of Transportation and recommend appropriate actions to correct any deficiencies.

With regard to road construction contracts, it was alleged that some construction companies in Tennessee would submit unreasonably low bids for road construction contracts. After they were awarded the work, the companies would submit requests for additional work and fees. These fees would provide the company with a greater profit margin than the original “underbid” work. In this way, the companies could recover the profit they lost on the original bid, and the state would be paying a higher overall cost on what initially appeared to be a low bid.

Supplemental agreements and variations between the quantity of work specified in the original contract (the quantity estimated by department engineers) and the quantity of work actually needed to complete the job can cause cost overruns. The department often requires the contractor to perform any extra work due to these variations at the price per unit-of-work agreed upon in the original contract. Only when the conditions of the work change, the contractor and

the department may agree on the price for the additional work, resulting in a supplemental agreement. In supplemental agreements, the price per unit-of-work is often higher than the price agreed upon in the original contract, if the contract contains an applicable unit price. Therefore, in light of the allegations, if true, it appears that the avenue a contractor would most likely have taken in regard to retroactively increasing his profit on a project would have involved a supplemental agreement.

This review revealed a need for greater documentation of decisions for supplemental agreements. This review did not substantiate the speculation of intentional underbidding on contracts.

### **3. Improvements needed in documentation of decisions for supplemental agreements**

#### **Finding**

In the review of road construction contracts, it was determined that net supplemental agreements totaling \$32,101,676 were approved by the department for road construction contracts closed during fiscal years 1997, 1998, and 1999. These 1,419 supplemental agreements amounted to 2.2 percent of the \$1,476,335,917 in total expenditures for the closed contracts for the period. This review for irregularities was based on a sample of the larger contracts having supplemental agreements. The total expenditures for this sample of seven contracts were \$21,783,697.

The review of the files relating to the sample of seven contracts chosen did not reveal any supplemental agreements without a stated basis for the additional work. These supplemental agreements appeared to have been routed through the regular administrative processes. However, because of the lack of detailed documentation supporting some decisions made by department officials, it could not be determined whether the bases for all the supplemental agreements reviewed were appropriate.

Such a lack of documentation to support management decisions calls into question the justification for supplemental agreements and raises concerns that the officials approving the transactions did not have all the necessary information before making the decision to approve the transactions. Requiring documentation for the expenditure of a material amount of funds would appear prudent and would assist top management in the approval stages.

The review also determined that the department does not have written procedures regarding the review and approval of incentive bonuses.

## **Recommendation**

Because of the large amount of funds involved in these projects, the department should review these issues and take corrective action to ensure that related decisions are founded on clear and reasonable facts, fully documented in the files, and subjected to appropriate review.

Because the use of incentive bonuses appears to be increasing (\$696,000 in 1997, \$1,075,850 in 1998, and \$1,921,175 in 1999), the promulgation of written procedures would appear prudent.

Because of the significant amount of overruns, the department should reevaluate the planning and implementation stages of road construction contracts. The department should develop a more effective means for estimating costs, for tightening negotiations with contractors during construction stages, and for analyzing past performance of contractors to determine possible abuses relating to overruns.

Furthermore, the department's internal auditor should review any newly implemented controls to ensure they are adequate and effective.

## **Management's Comment**

We concur. The Department has drafted "Guidelines for Using Incentive / Disincentive Provisions" which is currently under review.

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## **ALLEGATIONS OF IMPROPRIETIES INVOLVING RAILROAD CROSSING UPGRADE CONTRACTS—SPECIAL INVESTIGATION**

In March 1999, the Division of State Audit received allegations of improprieties involving the Department of Transportation. It was alleged that because some railroad crossings within the state of Tennessee that were not upgraded had higher priorities for upgrades on the department's list of railroad crossings than crossings that were upgraded, the director manipulated or disregarded the priority list to favor three Tennessee Southern Railroad Company crossings. A Special Report on these issues was released on November 16, 1999.

The objectives of the review were

- to determine whether a departmental employee had manipulated or disregarded the railroad project priority list to favor a certain railroad; and
- to report the findings to the Department of Transportation and recommend appropriate actions to correct any deficiencies.

The department is responsible for administering the federal railroad crossing upgrade program (Title 23 United States Code, Section 130). This federal program mandates that each state will maintain a listing of all railroad crossings which may require protective devices and provides for the state to schedule upgrade projects to provide for safety at railroad crossings. The department maintains a priority listing ranking the approximately 3,400 railroad crossings throughout the state in terms of need for safety improvements.

Our review determined that the director did disregard the priority list regarding one railroad crossing, Motivation Drive in Lawrenceburg, Tennessee. The 1997 upgrade to the railroad crossing at Motivation Drive included the unnecessary replacement of 12-inch lights with 12-inch lights as well as other improvements. However, under the actual facts regarding the conditions and history of that railroad crossing, it should not have been considered for any upgrades at the time. The result of the director's decision led to questioned costs of \$61,478.

It was also alleged that the director of the Section 130 Program had approved the three railroad crossings for upgrades although the existing warning lights were working and of modern design. This allegation was confirmed although other improvements were also made at these crossings. The director's decision to replace these existing warning lights resulted in additional questioned costs of \$4,250.

#### **4. Railroad crossing safety program needs improvement**

##### **Finding**

This review revealed serious shortcomings in the way railroad crossing upgrade decisions are made. Although there is a need for better documentation of decisions, it is clear that some decisions were made that were unjustified and inappropriate. It does not appear that improved documentation would have prevented these erroneous actions. The shortcomings effecting upgrade decisions were as follows:

- The director's decision to upgrade the railroad crossing at Motivation Drive appeared unjustified and unnecessary in light of the information gathered in this review. The result of the director's decision led to questioned costs of \$61,478.
- The director approved three railroad crossings for upgrades although the existing warning lights were working and of modern design. The cost of the equipment that was replaced unnecessarily totaled \$4,250.
- Three railroad crossings with high rankings on the 1997 priority list were overlooked.
- Other upgrade project decisions for other railroad crossings were based on inaccurate data and that supporting documentation for management's decisions was not always located in the respective files.

- Previously upgraded railroad crossings were excluded from the current upgrade considerations, regardless of the number of subsequent accidents or their priority ranking.
- Information regarding railroad crossing upgrade improvements was not shared between the Section 130 program and the track rehabilitation section of the department.

### **Recommendation**

Upper management of the department should consider this area one of high risk and should take appropriate actions to ensure a higher level of program review and address the apparent lack of accuracy in the program data. Furthermore, upper management should coordinate the sharing of data between the Section 130 program and rehabilitation sections. The Section 130 staff should document the railroad crossing safety weaknesses determined through on-site visits. This information should be compared to the priority list data and changes should be made if necessary. Those railroad crossing projects under review should then be reevaluated based on the accurate data.

The Section 130 staff should document the existing warning devices during on-site reviews and ensure that the department does not needlessly pay for the replacement of existing equipment that can be retained.

Under the circumstances noted in this review, at the very least written policies and procedures should be promulgated to ensure that the director's decisions for funding upgrade projects are subject to a higher level of review and that railroad crossings with high rankings are not overlooked.

Written policies and procedures should be promulgated to ensure that data collected to develop the priority list is accurate and up-to-date.

The department should consider the recommendations contained in this finding and take the appropriate measures to address the issues above. These measures should include personnel actions, the implementation of effective management controls, and establishment of greater oversight of certain functions. Furthermore, the department's internal auditor should review any newly implemented controls to ensure they are adequate and effective.

### **Management's Comment**

We concur. A new procedure manual has been drafted to clarify the conduct of the Section 130 program, and increase documentation of decisions made. Steps are being taken to attempt to obtain current, accurate data from the railroads in order to improve our decision

making process. These procedures are being circulated within the Department and to our internal audit staff for comment, and will be finalized in the near future.

We have taken personnel actions as recommended, adding the Director of Utilities in our Right-of-Way Division to provide independent oversight of the Diagnostic Team's findings and provide final approval of the team's recommendations before the improvements are programmed.

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## **RIGHT-OF-WAY DIVISION CONTRACTS – SPECIAL INVESTIGATION**

On March 25, 1999, Department of Transportation officials notified the Division of State Audit of an allegation that staff in the department's Right-of-Way Division had improperly used supplemental agreements to an appraisal contract to acquire computer-programming services. On March 25, 1999, Division of State Audit staff, in collaboration with Department of Transportation internal audit staff, began a review of the matter. A Special Report on this matter is pending.

The objectives of the review were

- to determine the nature and extent of any impropriety relating to the use of supplemental agreements to appraisal contracts to purchase computer-programming services;
- to examine the division's internal controls over the use of supplemental agreements to appraisal contracts to purchase items other than property appraisals;
- to report the results of the review to department management; and
- to refer the results of the review to the Office of the State Attorney General and other relevant state agencies if necessary.

The review included interviews with relevant former and current department staff, the private fee appraiser who facilitated the department's purchase of computer-programming services through supplemental agreements to his appraisal contract, and the independent contractors who actually performed the computer-programming work for the department.

The review determined that management officials with the department's Right-of-Way Division circumvented proper purchasing procedures by using supplemental agreements to an appraisal contract to obtain computer-programming services designed to update and improve the division's computerized appraisal tracking software. The underlying appraisal contract was originally entered into on September 19, 1996, with a private appraiser for appraisal work he performed in Williamson County. However, division management added six supplemental agreements to this contract totaling \$34,908.60 to purchase computer-programming services.

It was also discovered that from April 1990 to April 1998, 51 right-of-way consultant contracts contained language requiring the consultant to provide a computer system (CPU,

monitor, and printer) to the division at the conclusion of the contract. This acquisition method circumvented established procurement procedures requiring the purchase of computer equipment through the department's Information Technology Division.

## **5. Improper and inept manipulation of contracts to obtain computer-programming services**

### **Finding**

In using supplemental agreements to an appraisal contract as a payment vehicle for computer-programming services, division staff circumvented proper procurement procedures that avoided management oversight and approval. This circumvention of procedures also resulted in bypassing the Information Technology (IT) Division's review and evaluation of programming services obtained from the contractors. Furthermore, the circumvention resulted in unnecessary additional costs.

First, competitive bids were not solicited for the contract. In fact, there was no written "contract" for the computer-programming services. Instead, division staff used supplemental agreements to an appraisal contract to pay for the services. Second, division staff did not obtain the required approval from the department's IT Division before procuring the services. As a result, the IT Division was excluded from participating in the planning, monitoring, and evaluating of the computer-programming work. Third, the private appraiser was inappropriately paid \$3,478.60 to "manage" the work. In fact, the only duties performed by the private appraiser for this fee were providing checks to the computer programmers and submitting invoices to the division. Division staff admitted that the private appraiser had no computer expertise and that his only function was to ensure timely payment to the computer programmers.

It should also be noted that during 1990 and 1991, division staff improperly procured training services totaling \$22,265 in the same inappropriate manner discussed above.

### **Recommendation**

Right-of-Way Division management should ensure that supplemental agreements to appraisal contracts be used only for projects directly related to the underlying appraisal contract. Additionally, the department's IT Division should conduct a review of the appraisal tracking program to ascertain the quality of the programming work.

## **Management's Comment**

We concur. Management has issued a directive to Right-of-Way Division staff stating that only specific tract or project issues may be included in the appraisal contract. The practice of using these contracts to obtain services for non-related items has been eliminated.

### **6. Improper and inept manipulation of contracts to obtain computer equipment**

#### **Finding**

The review further disclosed that from April 1990 to April 1998, 51 right-of-way consultant contracts contained language requiring the consultant to provide a computer system (CPU, monitor, and printer) to the division at the conclusion of the contract. This acquisition method circumvented established procurement procedures requiring the purchase of computer equipment through the department's Information Technology (IT) Division.

The former director of the department's Right-of-Way division acknowledged that he began including computer acquisition provisions in consultant contracts in 1990 because he did not want to develop the required long-range purchase plan and await its approval by the IT Division. He stated that he did not seek approval of this purchasing method from his supervisor, nor did he specifically inform the Commissioner or general counsel that computer acquisition language was included in the consultant contracts.

The Commissioner of the Department of Transportation and the department's general counsel both stated that they had never seen the computer acquisition provisions in the contracts and would not have signed the contracts had they been aware of them. The general counsel explained that his office approves over 3,000 contracts a year and, as such, reviews right-of-way consultant contracts primarily for legal effect and to protect the department's interests. The Commissioner stated that, because of the volume of contracts submitted for his approval, he relied on the general counsel's office to appropriately scrutinize these consultant contracts before presenting them for his signature. Their failure to detect this improper acquisition practice allowed its continuance for eight years.

The lack of record keeping and internal controls did not allow an effective on-site inventory of the equipment received under these contracts. Almost none of the equipment was tagged as state inventory or entered into the department's property listing. In addition, many of the component parts of the computer systems were transferred to other regional offices or disposed of when outdated.

Of the 51 computer systems, only eight CPU's, seven monitors, and 22 printers that appeared to have been turned in by consultants could be located. Eight of the contracts had not been completed at the time of the inventory and the division had not received the computer systems applicable to these contracts. The remaining 35 CPU's, 36 monitors, and 21 printers could not be located. Items given to regional property officers for proper disposal were not



counted because division records for consultant-acquired computer equipment were insufficient to reconcile with departmental surplus records. Therefore, it could not be determined if the missing computer equipment had been properly surplus, thrown out, sold, or removed from the office for personal use.

The cost of the improperly acquired computer equipment was estimated to be \$79,050. The cost of the missing equipment was estimated to be \$48,850. These estimates were based on an average price paid by the consultants for the computer systems, as shown on five computer equipment invoices found in division files. It should be noted that only five such invoices could be located. Thus, these estimates are of limited reliability.

On March 25, 1999, the Director of the Right-of-Way Division sent a memorandum to the division's manager stating that the practice of using appraisal contracts to acquire services unrelated to the underlying property appraisal would not be approved in the future.

### **Recommendation**

Right-of-Way Division management should ensure that future purchases of computer equipment or services are approved by the department's IT Division and follow all appropriate procurement policies and procedures. Furthermore, all computer equipment received through consultant contracts should be tagged as inventory of the state and entered into the department's inventory records.

The Commissioner should take all steps necessary to set the proper tone throughout the department that policies are to be followed and shortcuts involving circumvention of controls and policies are not to be tolerated in any operation of the department. When obstacles to efficient operations appear to be interfering with procurement or other decisions, staff should elevate the problems to a level where the problems can be addressed, rather than merely finding an apparent way around the problem without correcting it.

The Commissioner should consider how to obtain a more complete review of the contracts bearing his signature and that of the department's general counsel. Furthermore, all contracts should be approved through the fiscal office after an appropriate review.

### **Management's Comment**

We concur. Management has stopped the practice of containing language in contracts requiring the consultant to furnish the Right-of-Way Division a computer system at the conclusion of the contract. All computer purchases are approved by the Information Technology Division. We feel that the current contract approval process is adequate.

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## BRIDGE MAINTENANCE AND INSPECTION

The bridge maintenance and inspection section of the Department of Transportation performs routine inspections on all bridges and other structures. The objectives of our review of the controls and procedures for the bridge maintenance and inspection section were to determine whether

- policies and procedures regarding bridge maintenance and inspections for structures that are greater than 20 feet in length are adequate and based on current National Bridge Inspection Standards from the Code of Federal Regulations,
- policies and procedures regarding bridge maintenance and inspections for structures that are less than 20 feet in length are adequate and based on the Department of Transportation's policies and procedures manual,
- personnel in charge of organizational units and bridge inspection teams are properly qualified, and
- effective monitoring and management of a National Bridge Inspection program is occurring.

We interviewed key department personnel to gain an understanding of the department's controls and procedures over bridge maintenance and inspection. We also reviewed supporting documentation for these controls and procedures. In addition, testwork was performed on a sample of inspections to determine if the individuals in charge of bridge inspection teams were properly qualified and if the bridges and other structures were inspected in accordance with departmental procedures.

We determined that the Department of Transportation does not always inspect bridges and other structures in accordance with departmental procedures as discussed in finding 7.

### **7. The Department of Transportation does not always inspect bridges and other structures in accordance with departmental procedures**

#### **Finding**

The bridge maintenance and inspection section of the Department of Transportation performs inspections on all bridges and other structures. However, the department does not always comply with its inspection procedures documented in *The Tennessee Department of Transportation Bridge Inspection Program Procedures Manual*.

#### **Structures (bridges) greater than 20 feet**

Based on a sample of inspections of structures (bridges) greater than 20 feet, the following discrepancies were noted.

- The department's staff was unable to locate one of ten inspection reports (10%) selected for testwork for the year ended June 30, 1998, so it could not be determined if the appropriate type of inspection was conducted and adequately documented within the required time period.
- The appropriate type of inspection was not performed for 5 of 25 bridges examined (20%) for the year ended June 30, 1999, and for 2 of 9 bridges examined (22.2%) for the year ended June 30, 1998. "Routine Inspections" were performed when "Full In-Depth Inspections" should have been performed. *The Tennessee Department of Transportation Bridge Inspection Program Procedures Manual* for structures (bridges) greater than 20 feet states, "Routine Inspections are not to exceed two cycles before performing another Full In-Depth Inspection regardless of structure material or condition." The standard inspection cycle is 24 months.
- Seven of 25 bridges examined (28%) for the year ended June 30, 1999, and 3 of 9 bridges examined (33.3%) for the year ended June 30, 1998, were not inspected within the required time period of 22 to 27 months. The manual states, ". . . the time period between inspections shall not be less than 22 months or greater than 27 months. This standard shall apply to Routine or In-Depth Inspections for all bridges which have been placed on a standard 24 month inspection cycle."

In addition, the department could not provide evidence that 3 of 25 individuals in charge of bridge inspection teams (12%) for the year ended June 30, 1999, and 2 of 5 individuals in charge of bridge inspection teams (40%) for the year ended June 30, 1998, completed a comprehensive training course. The National Bridge Inspection Standards, Appendix C, Section 650.307(b)(2), states, "An individual in charge of a bridge inspection team shall . . . have a minimum of 5 years experience in bridge inspection assignments in a responsible capacity and have completed a comprehensive training course based on the Bridge Inspector's Training Manual."

#### Structures less than 20 feet

Based on a sample of inspections of structures less than 20 feet, the following discrepancies were noted.

- The department's staff was unable to locate 11 of 20 short inspection reports (55%) selected for testwork for the year ended June 30, 1998, so it could not be determined if the appropriate type of inspection was conducted and adequately documented within the required time period.
- Ten of 25 structures examined (40%) for the year ended June 30, 1999, and 1 of 9 structures examined (11.1%) for the year ended June 30, 1998, were not inspected within the required period of 24 months. The Tennessee Department of Transportation Bridge Inspection Program Procedures Manual requires structures less than 20 feet in length to be inspected on a two-year inspection cycle.

- A log is not maintained for standard short inspection forms in the Bridge Inspection and Repair office. Therefore, the auditor could not determine whether the standard short inspection forms had been sent to the Bridge Inspection and Repair office within 60 days of the inspection. The Tennessee Department of Transportation Bridge Inspection Program Procedures Manual states that the standard short inspection forms are to be sent to the Bridge Inspection and Repair office within 60 days of the inspection. The manual also requires the standard short inspection forms to be logged by the appropriate Transportation Assistant once received.

### **Recommendation**

Management should ensure that adequate supporting documentation is maintained to provide evidence of all inspections. In addition, management should develop monitoring procedures to ensure the appropriate type of bridge inspections are completed, inspections are performed within the required time period, and that individuals in charge of bridge inspection teams have completed a comprehensive training course and have met all other applicable requirements for inspectors. Also, the Bridge Inspection and Repair office should log the standard short inspection forms once received.

### **Management's Comment**

We concur. The Department is reviewing options such as digital storage for better management of bridge inspection data.

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## **TRANSPORTATION EQUITY FUND**

The Department of Transportation is responsible for administering the Transportation Equity Fund, which is funded by a sales tax on the fuel purchased for aeronautics, water, and rail vehicles. Allocations from the Transportation Equity Fund are available for short line railroads to make track improvements.

The objectives of our review of the controls and procedures for the Transportation Equity Fund were to determine whether

- policies and procedures regarding the Transportation Equity Fund are adequate, and
- the department has effective monitoring procedures for the Transportation Equity Fund.

We interviewed key department personnel to gain an understanding of the department's controls and procedures over the Transportation Equity Fund. We also reviewed supporting documentation for these controls and procedures.

We determined that there are not any written policies and procedures for the Transportation Equity Fund as discussed in finding 8.

**8. The Department of Transportation does not have written policies and procedures relating to the Transportation Equity Fund**

**Finding**

The Department of Transportation is responsible for administering the Transportation Equity Fund, which is funded by a sales tax on the fuel purchased for aeronautics, water, and rail vehicles. A portion of the expenditures from this fund are allocated for improvements to short line railroads. However, there are no written policies and procedures governing the process for determining how funds should be distributed, how changes in the track needs of the short line railroads should be documented, or how the repairs should be monitored to ensure that the funds are spent for their intended purpose.

Management of the program described the following practices.

- Allocations from the Transportation Equity Fund are made to the short line railroad authorities based on an independent study that assessed the needs of each short line railroad. (A short line railroad is not included in the allocation process if it is not part of a railroad authority.) The needs remain the same each year unless a short line railroad eliminates sections of track. If this occurs, then the track needs are reduced for this railroad and allocations for the other railroads are adjusted appropriately.
- The department sends a letter to every short line railroad authority identifying its allocation for the next fiscal year. The railroad authority must submit a proposal identifying how it intends to spend the funds. The railroad authority can either perform the work itself or hire an outside contractor.
- The allocations to the short line railroads are divided into track rehabilitation and bridge rehabilitation. The state will fund 80% of the project's construction costs, and the railroad must match it with 20% from either local, federal, in-kind, or private donations. The total cost allowed for engineering services is limited to 5% of the construction dollars plus \$5,000 for track rehabilitation and 12% of the construction dollars plus \$1,000 for bridge rehabilitation. Administrative costs are limited to 2% of the construction dollars.
- The railroad authority hires an engineering consultant firm to conduct daily inspections while construction is performed. After the construction is completed, the contractor

submits an invoice to the engineering consultant firm. The firm ensures that the construction is complete and sends an engineer's letter to the railroad authority.

- The railroad authority sends an invoice and a copy of the engineer's letter to the department requesting payment. The department verifies that the work has been completed by going into the field and inspecting the contractor's work. If the work has been properly performed, the department approves the invoice for payment. The state remits its payment to the railroad authority, which is responsible for making the payment to the engineering consultant firm and the contractor, if applicable. Any part of the allocation that is not spent by the railroad authority within three years is retained by the Transportation Equity Fund to be reallocated for bridge rehabilitation.

A limited review of the fund revealed that the practices described by management appear to be followed. However, written policies and procedures are necessary to document the criteria used to support the functions within the fund, ensure consistency, prevent the appearance of any abuse, and defend the decisions made in the management of the fund, if questioned.

### **Recommendation**

Management should prepare written policies and procedures for the administration of the Transportation Equity Fund. These policies and procedures should provide a description of how funds are to be allocated and distributed and how repairs should be monitored to ensure that the funds are spent for their intended purpose. Also, written policies and procedures should be provided to all employees as part of their training regarding the fund. Management should take appropriate measures to monitor operations for compliance with the policies and procedures.

### **Management's Comment**

We concur. The Department's Public Transit, Rail and Waterways Division is preparing a Policy and Procedures Manual for Administration of the Transportation Equity Fund Railroad Rehabilitation Program.

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### **FINAL RECORDS**

Before the final contractor payment is made on any project, the final records office of the Department of Transportation collects all documentation relating to the project. The final records office has established guidelines on the minimum percentage of bid items that will be recalculated, reviewed for completeness, or compared to supporting documentation. The final records reviewer makes appropriate corrections and completes an error report. The final contractor payment is adjusted if necessary and released to the contractor after the final records review is complete.

The objectives of our review of the controls and procedures of the final records office were to determine whether

- the final records offices have reviewed at least the minimum percentages of bid items as required by departmental policy,
- errors and omissions from progress estimates have been corrected and construction offices have been contacted if errors seem excessive,
- the review of project records performed by the final records offices have been adequately documented, and
- the final records review and other reviews performed by the region offices provide management with reasonable assurance that project records support the payment of the final contract estimate.

We interviewed key department personnel to gain an understanding of the department's controls and procedures over the final records process. We also reviewed supporting documentation for these controls and procedures. In addition, testwork was performed on a sample of construction contracts from the final records offices.

We had no findings related to final records.

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## **OVERWEIGHT AND OVERDIMENSIONAL**

The Department of Transportation issues permits for moving overweight and overdimensional vehicles on Tennessee Highways. In the interest of public safety and the preservation of highways, these permits are necessary for the transportation of oversize, overweight, or overlength articles or commodities that cannot be reasonably dismantled or conveniently transported otherwise.

The objectives of our review of the controls and procedures for the Overweight and Overdimensional Permit Section were to determine whether

- procedures regarding safeguarding of unissued permits are adequate,
- duties within the section are properly segregated and internal controls are adequate,
- policies and procedures within the section appear adequate and based on current statutes,
- reconciliations of permits issued with revenue collections are performed, and

- rules and regulations for the issue of overweight and overdimensional permits have been complied with and the appropriate fees have been collected.

We interviewed key department personnel to gain an understanding of the department's controls and procedures for the Overweight and Overdimensional Permit Section. We also reviewed supporting documentation for these controls and procedures. In addition, testwork was performed on a sample of permits issued.

We determined that the Overweight and Overdimensional Permit Section is not requiring applicants to provide a surety bond for permits, as discussed in finding 9. In addition to the finding, another minor weaknesses came to our attention which has been reported to management in a separate letter.

## **9. The Department of Transportation does not require a surety bond for overweight and overdimensional permits**

### **Finding**

Applicants requesting permits for moving vehicles of excess weight or size on Tennessee highways are not required to provide a surety bond or proof of solvency before obtaining a permit. Section 55-7-205, *Tennessee Code Annotated*, stipulates the requirements for issuing permits for overweight and overdimensional vehicles. Subsection (g) states

Rules and regulations so prescribed by the commissioner shall require, as a condition of the issuance of such permits, that an applicant shall agree to and give bond with surety (unless an applicant shall by sworn statement furnish satisfactory proof of the applicant's own solvency to the authority issuing the permit) to indemnify the state and/or counties thereof, against damage to roads, or bridges, resulting from the use thereof by the applicant.

The overweight and overdimensional permit application process does not include procedures requiring the potential permit holder to provide a surety bond or proof of solvency. A surety bond or proof of solvency gives the state added assurance that the permit holder will be able to cover the cost of damage to Tennessee roads or bridges caused by the permit holder. Without a surety bond or proof of solvency, the state might be unable to recover the cost of repairs from the permit holder.

### **Recommendation**

The Overweight and Overdimensional Permit Section should develop written policies and procedures to require that potential overweight and overdimensional permit holders provide a surety bond or furnish satisfactory proof of solvency in compliance with *Tennessee Code Annotated*, Section 55-7-205(g). These policies and procedures should be incorporated into the



application process to ensure that permits are not issued until the surety bond or satisfactory proof of solvency is provided. Management should take appropriate measures to monitor operations for compliance with the policies and procedures.

### **Management's Comment**

We concur with the finding. However, the Department is currently working on legal interpretation of *TCA*, Section 55-7-205(g), as it pertains to proof of solvency and surety bond. The Department is also researching whether a valid insurance certificate could be substituted for the proof of solvency and the surety bond.

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## **INFORMATION SYSTEMS**

The Department of Transportation (DOT) uses a number of information systems, the principal system being DOT STARS (Statewide Accounting and Retrieval System). DOT STARS, which began operation during 1988, is an on-line, interactive, table-driven application used primarily for accounting and billing. The system currently has over 1,200 users.

Department of Finance and Administration (F&A) STARS is used to record the transactions for most state agencies. DOT requires a separate accounting and billing application due to the unique project-oriented nature of its transactions. There is an interface between DOT STARS and F&A STARS, and the records for DOT on these two applications are reconciled to ensure that the interface is functioning properly.

The objectives of our review of the information systems at the Department of Transportation focused on whether

- the information system policies and procedures were current and accurate;
- information system contingency planning was adequate and properly documented;
- DOT STARS security and operation were adequate and properly documented; and
- the interface between DOT STARS and F&A STARS functioned properly.

We interviewed key personnel to gain an understanding of the department's controls and procedures regarding these aspects of the information systems. We also reviewed supporting documentation. Additionally, we performed the following sample testwork:

- a sample of construction contracts on DOT STARS was tested for completeness,

- a sample of DOT STARS transaction batches was tested for conversion to proper F&A STARS data values,
- a sample of transactions containing errors was tested to ensure that the error correction process was functioning as described by management, and
- the system was queried to ensure that adequate protection was established for DOT STARS data and that system access was adequately controlled.

We determined that the department's disaster recovery documentation and data-processing security was not adequate, as discussed in findings 10 and 11. In addition to the findings, other minor weaknesses came to our attention which have been reported to management in a separate letter.

## **10. DOT STARS disaster recovery documentation is inadequate**

### **Finding**

The disaster recovery plan and the documented results of mock disaster testing for the Department of Transportation (DOT) Statewide Accounting and Retrieval System (STARS) are insufficient. The disaster recovery plan lacked the specific information necessary to restore DOT STARS in an emergency. Some of the information was simply a set of generic guidelines for preparing a disaster recovery plan. For example, the plan states

There should be a documented call list for people to contact if it becomes necessary to recover your application. Both home and office numbers should be included. There should be procedures for keeping this list current.

These vital details are not present in the plan. Other important information is missing from the disaster recovery plan as well. For instance, the alternative processing site is not identified, recovery teams and their job duties are not documented, and varying degrees of disaster are not addressed.

DOT STARS has consistently participated in the Office for Information Resources' (OIR's) mock disaster testing. However, the results of the most recent test are not adequately documented. The documentation provided is simply a listing of the programs that ran during the test and did not contain any evaluation, recommendations, or comments on the results of the test. Also, there is no indication that management reviewed the results.

DOT STARS is a mission-critical system that processes virtually all of Transportation's accounting data. To be properly prepared for a disaster, the department must thoroughly document its disaster recovery procedures and the results of testing those procedures. In the

event of a disaster, this documentation can help ensure that Transportation's business and accounting functions are quickly restored.

### **Recommendation**

The department should thoroughly document specific disaster recovery procedures and the results of testing those procedures. The guidelines set forth in the existing disaster recovery plan should be implemented, and other procedures necessary for a comprehensive plan should also be included. The procedures should be prioritized and should list the specific actions to be taken from the moment a disaster is declared to the time that normal business operations are resumed. Employees and vendors should be fully aware of their responsibilities regarding the plan. Management should ensure that the disaster recovery plan is periodically updated to reflect current operating conditions. Participation in OIR's mock disaster testing should be fully documented to include an evaluation of and recommendations based on the results of the tests. Both the disaster recovery plan and the results of disaster recovery testing should be reviewed and approved by senior management.

### **Management's Comment**

We concur. The Department's disaster recovery plan is being updated to document the contact employee's home and office phone numbers, the alternative processing site should the plan be put into effect, the recovery teams and their job duties, and procedures for varying degrees of disaster as addressed in the finding.

## **11. Computer administrative and security controls need improvement**

### **Finding**

The Department of Transportation needs to improve its controls over the authorization and approval of computer user access, and the elimination of user access for terminating employees. The following discrepancies were noted:

- a. Access was not appropriately terminated for 28 of 911 users.
  - Two former DOT employees did not have either their RACF or DOT STARS access terminated. (RACF access is required to access the state's mainframe computer.) With both RACF and DOT STARS access, these former employees could continue to access the department's system.
  - Twenty-two former employees still had active accounts in DOT STARS. Although their RACF access was terminated, if these employees were employed by

other state agencies and given RACF access, they could continue to access DOT STARS.

- Four former auditors still had active accounts in DOT STARS. Although these auditors' access was inquiry-only, their access was not necessary after the completion of the audit.
- b. The process for authorizing users in DOT STARS is not sufficiently documented and current practices are not consistent. Some supervisors e-mail or call the system administrator requesting access for an employee and documentation of the supervisor's approval was generally not maintained. For 8 of 25 DOT STARS users tested (32%), there was no supporting documentation authorizing their access to the system. For those users tested with written authorization, the documentation did not specify the level of access required by the user. Also, the DOT STARS Support Group was not regularly using the DOT STARS Security Request/Authorization form, DT-1655, to assign new users to the DOT STARS system, as prescribed in the department's *Financial Procedures Manual*.

Strong computer security controls will help prevent the unauthorized access, deletion, or alteration of data. Security controls will also limit a user's system access on a "need-to-know, need-to-do" basis. The proper administrative controls will assist management in maintaining the appropriate level of computer security.

### **Recommendation**

Management should implement the proper computer administrative and security controls over the authorization and approval of user access, and the termination of user access. Written authorization should be maintained on file for all users of the department's significant or mission-critical information system. The authorization should specify the system capabilities required by the user and should be approved by the employee's supervisor and the security administrator. User access should be regularly reviewed to determine whether it is still appropriate, based on the employee's current job responsibilities. Changes should be made based on documented requests from user management. The DOT STARS Security Request/-Authorization Form, DT-1655, should be properly completed for all authorized users, as indicated in the department's policies; or the policies should be updated to reflect current operating conditions.

Controls should be implemented to ensure that user access is revoked immediately after employment ends or when the user no longer requires access.

### **Management's Comment**

We concur. The Department's STARS system access has been terminated for all former DOT employees and for all non-DOT employees. When notice is now received by our Payroll Section personnel of an employee's separation from DOT, the access to the STARS system will be terminated for that employee. The process whereby employees receive access to DOT STARS has been modified to allow use of form DT-1655 or other forms of written authorization, which will be maintained.

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### **INTERNAL AUDIT**

The objectives of our review of the controls and procedures within internal audit were to determine whether

- internal auditors have the education, experience and supervision necessary for State Audit to rely on their work,
- the internal audit unit is independent from the program functions of the department, and
- internal auditors prepare sufficient working papers to document their work.

We interviewed key department personnel to gain an understanding of the department's controls and procedures regarding internal audit. We also reviewed supporting documentation for these controls and procedures. In addition, testwork was performed on a sample of audit reports.

We had no findings related to internal audit.

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### **PRIOR AUDIT FINDINGS**

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Section 8-4-109, *Tennessee Code Annotated*, requires that each state department, agency, or institution report to the Comptroller of the Treasury the action taken to implement the recommendations in the prior audit report. The Department of Transportation filed its report with the Department of Audit on October 27, 1998. A follow-up of all prior audit findings was conducted as part of the current audit.

## **RESOLVED AUDIT FINDINGS**

The current audit disclosed that the Department of Transportation has corrected the previous audit findings concerning unsupported payments to contractors, not always following policies designed to ensure Davis-Bacon compliance, and inadequate data processing security.

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## **OBSERVATIONS AND COMMENTS**

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### **TITLE VI OF THE CIVIL RIGHTS ACT OF 1964**

*Tennessee Code Annotated*, Section 4-21-901, requires each state governmental entity subject to the requirements of Title VI of the Civil Rights Act of 1964 to submit an annual Title VI compliance report and implementation plan to the Department of Audit by June 30, 1994, and each June 30 thereafter. The Department of Transportation filed its compliance reports and implementation plans on June 30, 1999, and June 30, 1998.

Title VI of the Civil Rights Act of 1964 is a federal law. The act requires all state agencies receiving federal money to develop and implement plans to ensure that no person shall, on the grounds of race, color, or origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal funds.

On October 15, 1998, the commissioner of Finance and Administration notified all cabinet officers and agency heads that the Human Rights Commission is the coordinating state agency for the monitoring and enforcement of Title VI.

A summary of the dates state agencies filed their annual Title VI compliance reports and implementation plans is presented in the special report *Submission of Title VI Implementation Plans*, issued annually by the Comptroller of the Treasury.

### **TITLE IX OF THE EDUCATION AMENDMENTS OF 1972**

*Tennessee Code Annotated*, Section 4-4-123, requires each state governmental entity subject to the requirements of Title IX of the Education Amendments of 1972 to submit an annual Title IX compliance report and implementation plan to the Department of Audit by June 30, 1999, and each June 30 thereafter. The Department of Transportation did not file its compliance report and implementation plan by June 30, 1999, in violation of this statutory requirement.

Title IX of the Education Amendments of 1972 is a federal law. The act requires all state agencies receiving federal money to develop and implement plans to ensure that no one receiving benefits under a federally funded education program and activity is discriminated against on the basis of gender. The untimely filing of the compliance report and implementation plan required by

state law does not necessarily mean that the Department of Transportation is not in compliance with federal law.

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## APPENDIX

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### DIVISIONS AND ALLOTMENT CODES

Department of Transportation divisions and allotment codes:

401	Transportation Headquarters
403	Bureau of Planning and Development
411	Bureau of Operations
412	Engineering Administration
414	Liability Insurance Premiums
416	Area Mass Transit
417	Waterways and Rail Transportation
418	Field Construction Operations
419	Field Maintenance Operations
430	Equipment Administration
440	Planning and Research
451	Maintenance and Marking
453	Betterments
455	State Aid
461	Rural Roads Construction
462	Federal Secondary Construction
470	State Industrial Access
471	State Construction
472	Interstate Construction
473	Primary Construction
475	Forest Highways
476	Appalachia Construction
478	Local Interstate Connectors
479	State Secondary Construction
480	State Highway Construction
481	Capital Improvements
482	Other Construction
484	Great River Road
485	Highway Beautification
487	Metropolitan - Urban Construction
488	Bridge Replacement
489	Highway Safety Construction
494	Transportation Equity Fund